8. Michal

Program Name: Michal.java **Input File: michal.dat**

Michal's school just got a new scrolling marquee sign, but the problem is, the sign didn't come with a controller! Michal's principal has asked Michal to write a program to convert all input into text to be displayed on the sign. Michal knows this is a big undertaking, so he has decided to start with only the numerical digits 0-9 first.

The sign utilizes a seven-segment display. For example, if all 7 segments are turned on, you would get the numeral 8 as shown below:

```
*****
*   *
*|_|*
*|_|*
*   *
*****
```

With a combination of turning certain segments on or off, all digits 0-9 can be achieved as the table below shows:

*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
* _ *	* *	* _ *	* _ *	* *	* _ *	* _ *	* _ *	* _ *	* _ *
| |	* |*	* _|*	* _|*	*|_|*	*|_ *	*|_ *	* |*	*|_|*	*|_|*
|_|	* |*	*|_ *	* _|*	* |*	* _|*	*|_|*	* |*	*|_|*	* |*
* *	* *	* *	* *	* *	* *	* *	* *	* *	* *
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

Outputting one number at a time wouldn't be too hard programmatically, a switch statement or if-else statement could get the job done in a jiffy. The problem is, Michal's principal wants to utilize the sign's full potential and display multiple numbers at one time. For example, if Michal's principal wanted to display "0123456789" the sign would need to display:

```
********************************
*  _     _  _     _  _  _  _  _  *
*| |  | _| _||_||_ |_   ||_||_|*
*|_|  ||_  _|  | _||_|  ||_|  |*
*                              *
********************************
```

Given an input number, can you help Michal write a program that outputs the input number on a single line surrounded by a box of asterisks ('*')?

Input: The input will consist of an integer *T*, the number of test cases. *T* will be in the range of *[1,20]*. For each test case, input will consist of a single number with a minimum of one digit, and a maximum of 20 digits. The input will have no spaces and will consist of the digits [0-9] only.

Output: For each test case, you are to output the number using the seven segment table above, in a single bounded box of asterisks

~ Sample input and output on next page ~

Michal, continued

Sample input:

```
7
8
0123456789
9876543210
2022
01010001
246810
13579
```

Sample output:

```
*****
* _ *
*|_|*
*|_|*
*   *
*****
*********************************
* _      _  _      _  _  _  _  _ *
*| |  | |_| |_||_||_ |_   ||_||_|*
*|_|  ||_  _|  | _||_|  ||_|  |*
*                               *
*********************************
*********************************
* _  _  _  _  _      _  _     _ *
*|_||_|  ||_ |_ |_| |_| _|  || |*
*  ||_|  ||_| _|  | _||_   ||_|*
*                               *
*********************************
**************
* _  _  _  _ *
* _|| | _| _|*
*|_ |_||_ |_ *
*           *
**************
*************************
* _     _     _  _  _     *
*| |  || |  || || || |  |*
*|_|  ||_|  ||_||_||_|  |*
*                       *
*************************
********************
* _     _  _     _ *
* _||_||_ |_|  || |*
*|_   ||_||_|  ||_|*
*                  *
********************
*****************
*    _  _  _  _ *
*  | _||_   ||_|*
*  | _| _|  |  |*
*             *
*****************
```